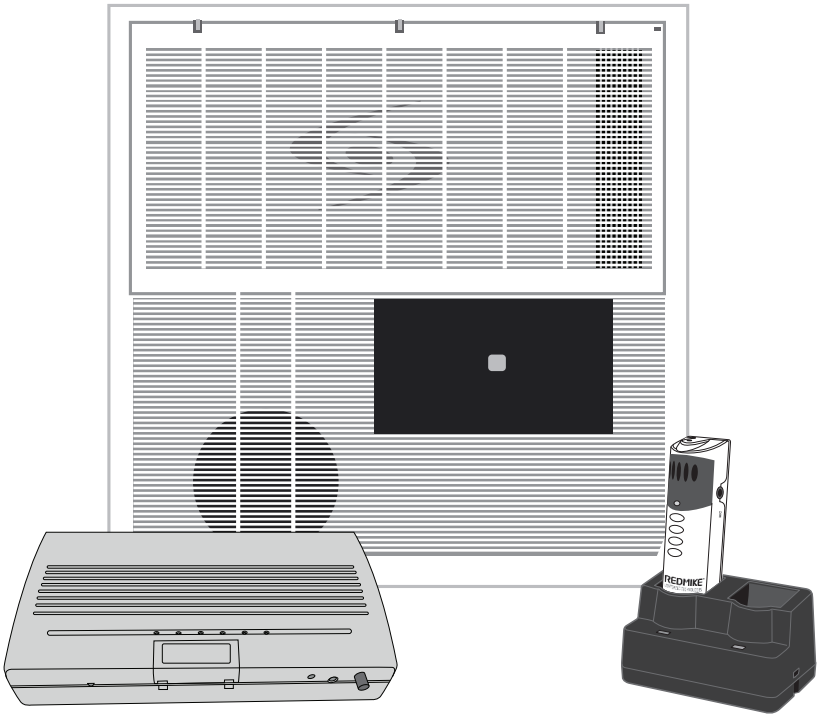
lightspeed™

TOPCAT

Classroom Audio System



User Manual

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IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use the apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding- type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. When the mains plug or appliance coupler used as the disconnect device, it shall remain readily operable.
16. Please keep the unit in a good ventilation environment.

IMPORTANT SAFETY INSTRUCTIONS CONT'D

To avoid potential equipment damage and/or serious injury, READ AND FOLLOW all safety precautions when installing the TOPCAT. WARNINGS are coated throughout the procedural steps in this guide, and are repeated below for emphasis.

- **USE A CERTIFIED ELECTRICIAN FOR POWER CONNECTIONS.** The TOPCAT system uses standard 100 – 240VAC power. Obtain the services of a certified electrician when supplying and connecting power to the Ceiling Enclosure. BE SURE electrical installation complies with local building codes. Improperly installing and/or connecting power to the system may result in EQUIPMENT DAMAGE, serious INJURY and/or DEATH.
- **DO NOT INSTALL ALONE.** The Ceiling Enclosure weighs approximately 20 lbs, and requires at least two people to install. DO NOT install alone.
- **USE SUITABLE LADDERS.** use proper ladders or support platforms when installing the TOPCAT Enclosure. DO NOT stand on chairs, tables, or other unsuitable surfaces.
- **SUPPORT THE CEILING ENCLOSURE PROPERLY.** DO NOT allow the full weight of the Ceiling Enclosure to rest on the tile grid of the ceiling. The Ceiling Enclosure is designed to be suspended at TWO POINTS by suspension wires (secured to rafters or other suitable mounting points) and to rest LIGHTLY on the tile grid.

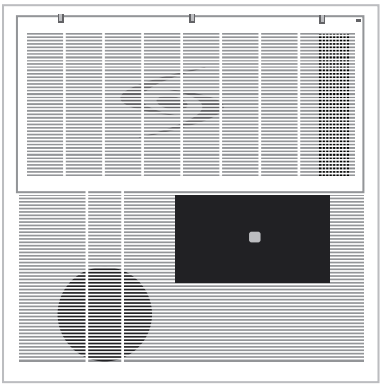
SECTION 1:

OVERVIEW

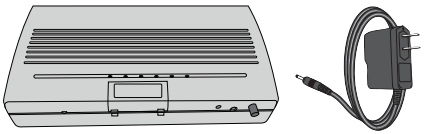
SYSTEM COMPONENTS AND UNPACKING

The standard configuration of the TOPCAT® will contain:

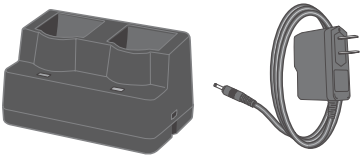
TOPCAT Module



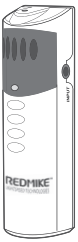
Media Connector Module



Charging Cradle and Power Supply



REDMIKE® VC Volume Control Microphone

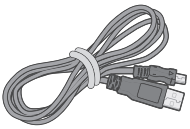


SYSTEM COMPONENTS AND UNPACKING

CONT'D

Audio Cable Kit

USB Cable

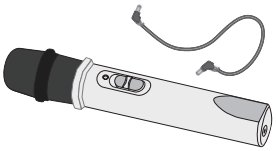


Screws and Anchors for optional wall mounting

OPTIONAL COMPONENTS

Optional equipment which may be part of your TOPCAT system:

REDMIKE® Share Handheld Mic & Charger Cable



DC Cable

SYSTEM COMPONENTS

Equipment which may be part of your TOPCAT:

Standard Accessories	
TRX-TC	TOPCAT all-in-one ceiling mount system
PS-24V-2.5	24V/2.5A power supply for TOPCAT
RMV	REDMIKE VC microphone with battery
BA-NH2A27	AA NiMH rechargeable sensing battery for REDMIKE
AC-RMLC2	REDMIKE lavaliere cord
BC-RMCC	REDMIKE cradle charger
PS-5V-1.0	5V/1.0A power supply
TRX-MC	Transmitter-Receiver Media Connector Module
CA-USBAM	USB cable (type A-MINI-B)
CA-MSC3535	Patch cables 3.5mm to 3.5mm short length
CA-AD-RCA2-35	Dual RCA jack – 3.5mm stereo plug adapter

Optional Components	
RMS	REDMIKE Share handheld microphone w/battery pack
MC-TK250LTM	Noise-canceling headset microphone
AC-TCC7	Charging cable for LT-71 and REDMIKE Share microphones
CA-RCA6	6′ dual RCA audio cable
CA-RCA24	24′ dual RCA audio cable
CA-MMC2535	Audio patch cable (2.5 mm mono to 3.5 mm mono)
BA-NH2APK	AA Rechargeable battery (REDMIKE Share)
DCPEX-NA	50′ plenum rated DC Power cable kit

SECTION 2:

INSTALLATION

INSTALLATION PLANNING

Before beginning installation, make sure you have the necessary tools and materials on hand and that pre-installation site preparation has been accomplished.

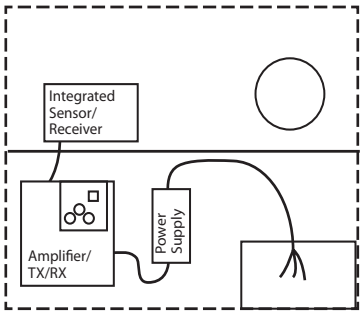
TOOLS & MATERIALS

In addition to the contents of the TOPCAT system, you will need the following tools & materials:

- Flat Blade screwdriver (small)
- Pliers
- Wire cutters
- Drill
- Utility Knife

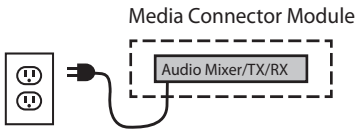
SITE PREPARATIONS

A schematic/wiring diagram of a typical TOPCAT installation is shown in the following figure:



TOPCAT Module

NOTE: TOPCAT is designed for installation in a 2' x 2' or 2' x 4' suspended ceiling grid (or 600mm x 600mm international ceiling grids). If you do not have this type of ceiling, please contact your local Lightspeed Classroom Audio Consultant.



1. SELECT MOUNTING LOCATION

The TOPCAT is shipped ready to mount in a standard suspended ceiling grid. All mounting hardware need to secure the TOPCAT in the ceiling is provided except for that needed to wire the AC power to the chassis.

TOPCAT will distribute sound throughout a classroom of up to 1600 square feet. The location of TOPCAT is critical to ensure even sound distribution.

1. Identify the center of the listening area of the classroom for optimum location. See Figure 1.
2. Select a ceiling tile that is free of fixtures (lighting, HVAC, etc.) nearest to the center point.

3. Remove the selected ceiling tile for TOPCAT installation.

NOTE: Do not install where the integrated sensor/receiver (ISR) is in the reflected light of a hanging light fixture. The ISR can be removed from the TOPCAT and placed elsewhere on the ceiling or classroom wall.

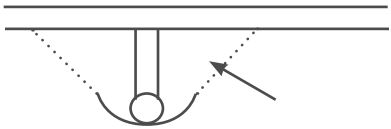
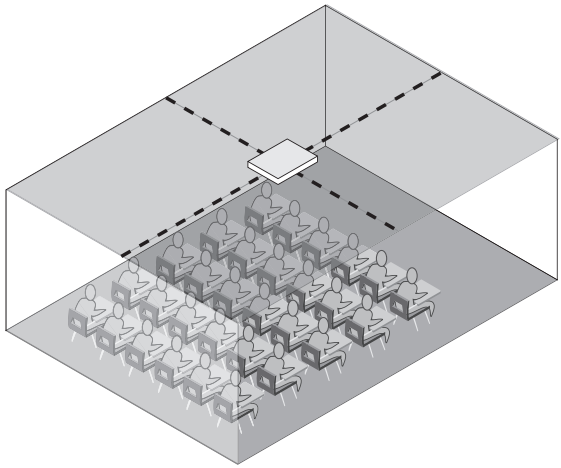


Fig 1: Identify the Center of the Listening Area



2. INSTALLING THE TOPCAT INTO THE CEILING GRID

The dimensions of the TOPCAT speaker are 595mm x 595mm and is designed to lie onto any standard suspended ceiling tile grid. Spacers are attached to center the TOPCAT in a 2′ x 2′ or 2′ x 4′ ceiling grid. (Remove these spacers when installing into a 600 x 600 mm grid.)

1. If the ceiling tile that was removed is 2′ x 4′, it needs to be cut in half to accommodate the TOPCAT. If the ceiling tile that was removed is 2′ x 2′, no cutting of the tile is necessary.
2. Set the ceiling tile on a flat work surface with the patterned side facing down.
3. Using a straight edge, cut the 2′ x 4′ ceiling in half (see figure 2) leaving two 2′ x 2′ sections.
4. Locate the 2′ ceiling grid t-bar attachment. Locate the attachment slots in the existing ceiling grid and snap the new t-bar into place to crate two 2′ x 2′ openings (see figure 3).
5. Lift the TOPCAT up and lay it into the desired 2′ x 2′ opening in the ceiling.

Figure 2: Cut the 2′ x 4′ Tile in Half

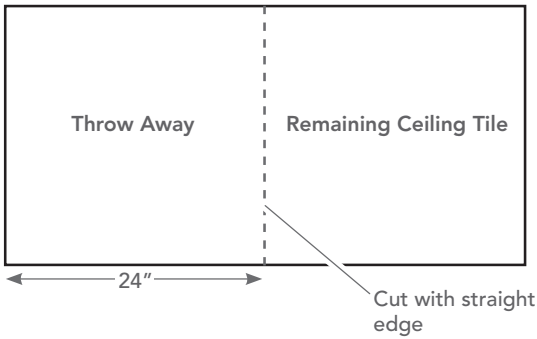
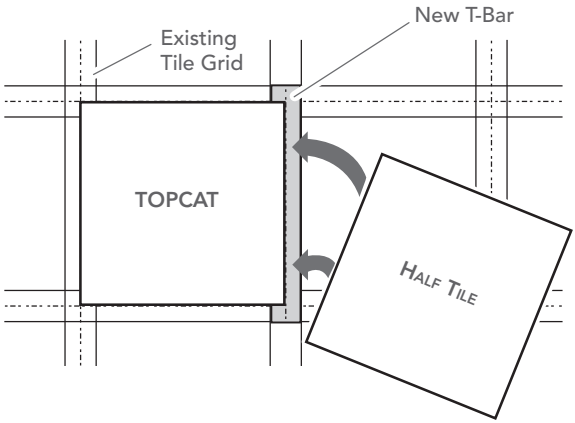


Figure 3: Create Two 2′ x 2′ Openings



3. SECURING THE TOPCAT

To comply with Building Codes, the TOPCAT MUST be fastened to the ceiling grid and secured with a safety wire.

1. Locate the four (4) self-drilling sheet metal screws.
2. Utilizing existing center holes on the vertical section of the ceiling grid, drill one screw per side on opposite sides of the TOPCAT (see figure 4).
3. Locate the 15ft length of safety wire and the eye screw. The safety wire needs to be permanently attached to the solid structural ceiling above.
4. Install the eye screw (or concrete anchors if necessary) into the structural ceiling.
5. Loop one end of the safety wire through the eye screw (or anchor), then twist it around itself at least five times.
6. Pull one of the tabs up on the TOPCAT rear panel (located in opposite corners) and loop the other end of the safety wire through the tab. Pull the wire through until it is taught and twist it around itself at least five times to secure the speaker. Cut off any excess wire if needed. (see figure 5)

Figure 4: Secure with Self-Drill Screws into the TOPCAT

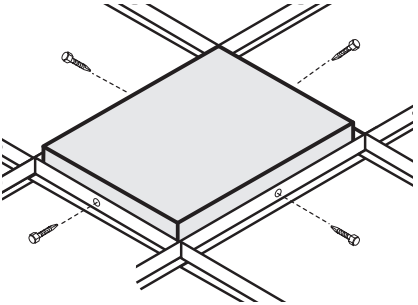
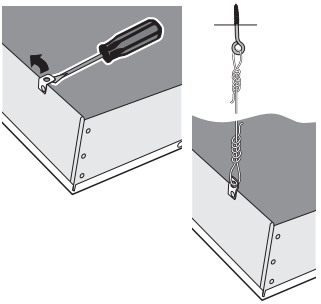


Figure 5: Looping the Safety Wire Through the Tab



4. INSTALLING AND WIRING ELECTRICAL POWER

There are two methods of providing power for the TOPCAT.

1. New Construction Installations: Connect directly to the buildings mains AC power.
2. Retrofit situations: Can either wire to the building mains or order the optional power extension cable (DCPEX-NA).

SUPPLY POWER TO THE SELECTED LOCATION

WARNING!

USE A CERTIFIED ELECTRICIAN FOR POWER CONNECTIONS.

The TOPCAT System uses standard 100 – 240VAC power. Obtain the services of a certified electrician when supplying and connecting power to the TOPCAT chassis. Be sure electrical installation complies with local building codes. Improperly installing and /or connecting power to the system may result in Equipment Damage, serious injury and/or Death.

When routing power to the TOPCAT, avoid interference with lighting and other noise possibilities.

CAUTION:

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Wire AC power to the TOPCAT as follows:

a. Turn off the current at the main breaker. Attach the electrical wiring to the TOPCAT Ceiling Module as shown

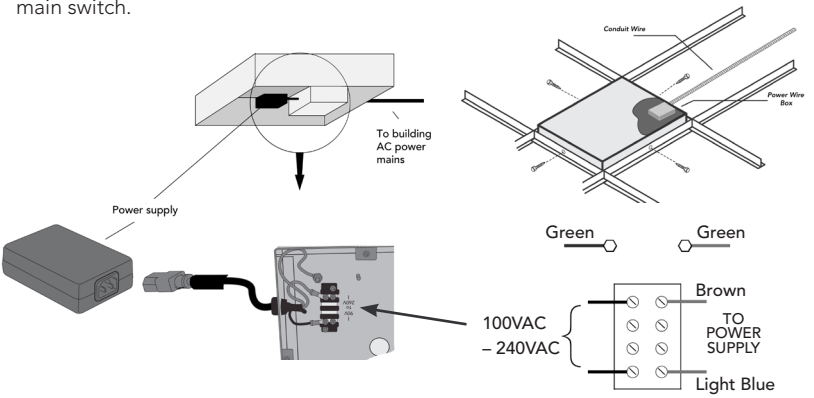
b. Find the electrical box hole on the TOPCAT back can. Insert the mains electrical wire through the hole.

c. Find and open the front panel door on the TOPCAT.

d. Remove the lid to the internal electrical box

e. Attach the ground wire to the grounding lug provided. Attach the remaining two wires to the terminal block screws adjacent to the internal power wires.

f. Replace the lid on the electrical box and turn the electrical current on at the main switch.



ALTERNATE POWER (OPTIONAL)

When electrical AC power is not available above the ceiling for installation with the TOPCAT, there is an alternative method for supplying power to the TOPCAT.

Note: There are two DC Power Connectors for connecting power to the TOPCAT. Both connectors perform the same function. Use the internal DC Power Connector located on the amplifier card when AC power is connected directly to the TOPCAT. Use the connector access located on the outside of the TOPCAT when using the optional power extender cable.

1. Remove the 24V 2.5A power supply module with its DC power cord that is secured inside the access door of the TOPCAT.

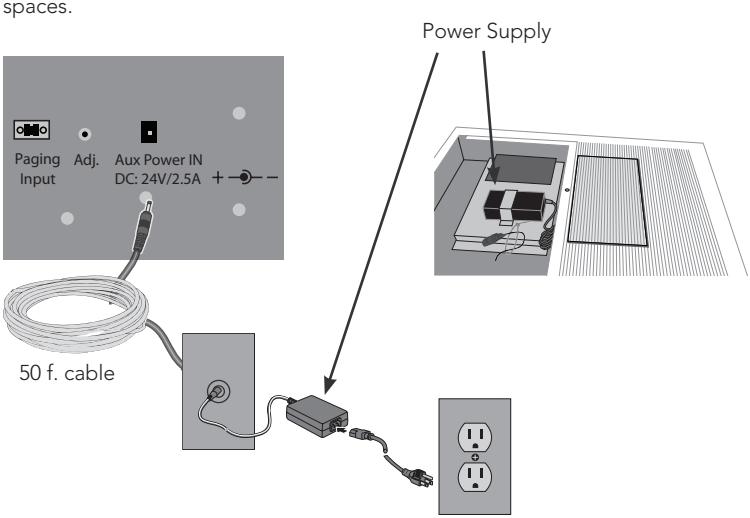
2. Find the 50' DC power extender cable (P/N: CA-DCPEX) and plug the female connector into the side port on the TOPCAT. Use the wire anchor supplied with the cable to secure the cable to the side of the TOPCAT chassis. Use the cable tie provided to secure the end of the power cable remaining in the TOPCAT. This cable should not touch the flat panel speaker when the door is closed.

3. Route the power extender cable across the ceiling and to the closest standard AC power outlet. Cable routing should follow all local electrical codes and installation procedures. (If the power extender cable is to be run inside the wall, install a mud ring or electrical box in the wall close to the AC power outlet. If the power extender cable is run on the surface of the wall using wire molding, then mount a surface mount electrical box to house the connection of the extender cable and the power supply.)

4. Plug the DC power cable end of the 24V supply into the power extender cable.

5. Plug the AC power cord into the power supply and into the standard AC power outlet.

Note: the 50' power extender cable is plenum rated, suitable for air handling spaces.



5. LOCATION OF THE MEDIA CONNECTOR

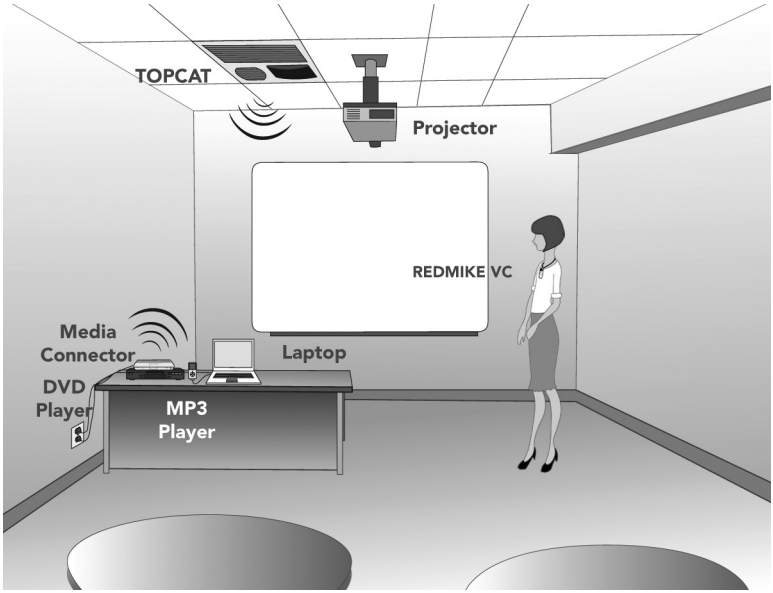
Choose a location for the Media Connector module that is convenient to the classroom audio sources and power supply.

The MC can be placed on a counter or wall mounted. Determine the best location for your room. Use the guidelines below when selecting the site.

NOTE: The MC does not require a direct line of sight to the TOPCAT. However it functions best when no obstructions are between the two devices. Do not place in an enclosed metal cabinet.

COUNTER OR DESKTOP

- 3-6 feet off of the ground to allow for good transmission
- Not enclosed in a metal cabinet or otherwise obstructed.



6. CONNECTING THE POWER SUPPLY

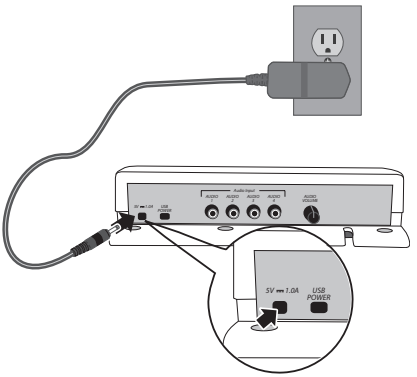
The Media Connector (MC) can be powered in either of two ways:

- AC power from a nearby electrical outlet
- USB power from a computer

Use whichever power source is most convenient to the location of the MC.

AC Power

1. Locate the DC port at the rear of the MC.
2. Place the DC end of power cord into DC port at the rear of the MC.
3. Place the AC end of power cord into an electrical outlet.
4. Press the power-on button located on the front of the MC.

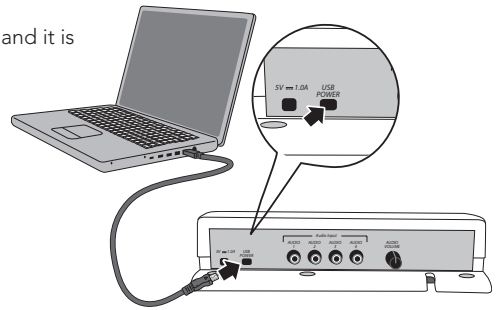


USB Power

If the primary audio source is a computer, it might be more convenient to use the supplied USB cable to power the MC from that computer.

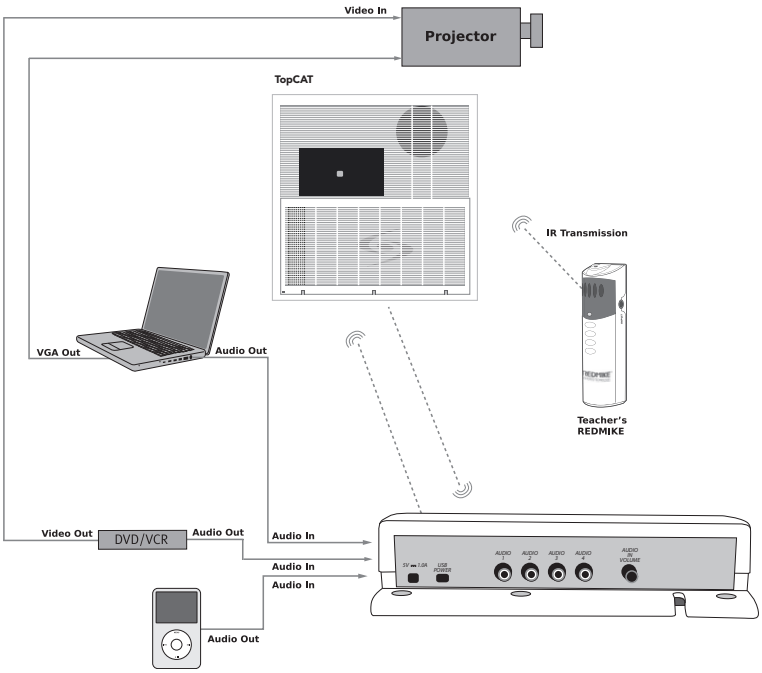
1. Insert USB cable into MC.
2. Insert USB cable into any available USB port on the computer.
3. Press the power-on button located on the front of the MC.

You have now set-up the MC and it is ready to use.



7. AUDIO INTEGRATION

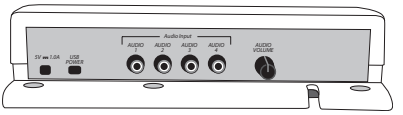
The Media Connector is designed to integrate multiple audio sources quickly and easily.



8. VOLUME ADJUSTMENT FOR THE MEDIA CONNECTOR

The Media Connector can be used as the primary volume control for the audio sources you've connected.

1. Connect the audio source(s) to the Media Connector using the 3.5mm cables provided
2. Set the audio source volume to provide sound through the TOPCAT
3. Use the Media Connector Volume control to increase or decrease the sound level.



NORMALIZING AUDIO SOURCE VOLUME CONTROLS

Use the Media Connector as the master audio volume control for the classroom. When two or more audio sources are connected, you will need to normalize volume settings by setting all connected audio sources to the same sound level while leaving the Media Connector volume control set to its center setting. The Media Connector module is an audio mixer using a master volume control to adjust the volume of all audio sources at once. Use the following procedure to set audio source volumes:

1. Connect the multimedia audio sources to the Media Connector using the 3.5mm cables provided.
2. Set the master volume control on the Media Connector to its center position.
3. Turn on an audio source that does not have an accessible audio level control. (DVD, VCR player)
4. Adjust the Media Connector master volume control so the audio level playing through the speaker is appropriate for the classroom.
5. Turn off the first audio source.
6. Turn on the second audio source. Use its volume control to balance the audio output to the same audio level played through the speaker as the first source.
7. Repeat steps 5 and 6 for the remaining audio sources.
8. Now, the Media Connector's master volume can be used to increase or decrease the volume level for all audio sources as desired.

9. TOPCAT AND MEDIA CONNECTOR REGISTRATION

The TOPCAT and Media Connector must be registered or synchronized with each other before they will operated together. (These modules come pre-registered from the factory.) On occasion, one of these modules may be replaced so the registration process will be needed.

Use the following table to determine if your TOPCAT and Media Connector are registered.

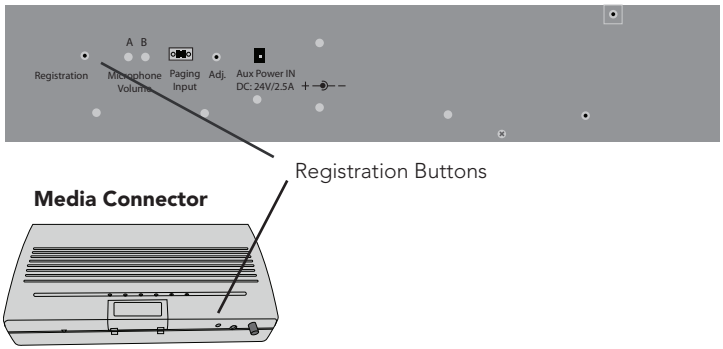
MC Power	MC LINK LED	Status
OFF	All LEDs Off	Turn MC Power ON Blue LED is LIT
ON	Blinking Green	Not Linked - Needs to be registered
ON	Continuous Green	Linked to TOPCAT

NOTE: If the link LED on the MC module is continuous green, the following procedure does not need to be done.

To register TOPCAT with its Media Connector Module:

1. Locate the registration button on the side of the TOPCAT module.

TOPCAT



2. Start the procedure by pushing the registration button. You will have 20 seconds to push the corresponding registration button on the Media Connector.
3. Push the registration button on the Media Connector Module. The amber LED will begin to blink. When registration process is complete, the LINK LED will glow green and the amber LED will go off.

NOTE: If after pushing the Registration button on TOPCAT the corresponding button on the Media Connector is not pushed within 20 sec., the amber LED will go from a slow blinking to a fast blinking. This means the registration process has timed out. Wait until the amber LED stops blinking to start the registration again.

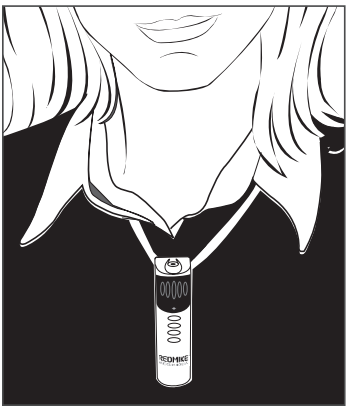
10. SETUP AND OPERATION OF THE REDMIKE VC AND TOPCAT

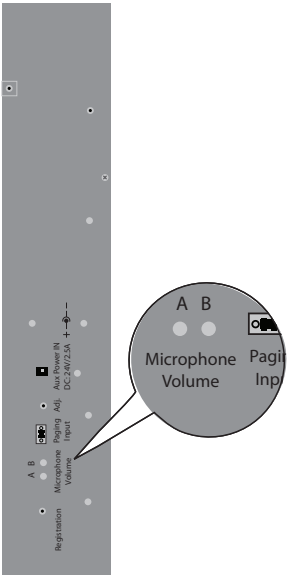
Once the REDMIKE is charged, follow these steps to set it up for use.

NOTE: This procedure is easier with two people.

1. Turn the TOPCAT power on. The blue LED on the Media Connector will glow.
2. Remove the REDMIKE VC from the charging cradle and turn it on.
3. Slip the REDMIKE VC with lanyard around the neck and position the top of the microphone just below the collarbone. NOTE: Positioning of the REDMIKE VC is critical for proper volume adjustment.
4. Set the REDMIKE VC volume to its midpoint. Push the up arrow button 9 times followed by pushing the down arrow button 4 times. The REDMIKE VC is at its midpoint.
5. While speaking in a normal voice slowly increase the volume of the corresponding channel (A or B) on the TOPCAT until your voice is barely audible. Each REDMIKE VC has its channel pre-set to either A or B, as indicated on the back of the Mic.

   REMEMBER: This equipment supplements the user's voice so they are able to speak in a conversational tone. Having the volume set too high will result in feedback and listener fatigue.
6. Once initial volume level is set, walk around the room and listen for audio dropout and overall audio quality.
   Note: A nominal volume level must be set on the TOPCAT before adjusting controls on the REDMIKE VC.
7. The teacher can now use the controls on the REDMIKE VC to adjust the volume level from anywhere in the room. The microphone volume control has 4 steps up and 4 steps down from the mid point (9 levels total).
6. If a second REDMIKE VC was purchased, repeat steps 2-5.





TIPS TO OBTAIN OPTIMUM AUDIO PERFORMANCE

- Speak in a natural voice. A normal conversational speech level will provide an adequate signal. It is not necessary to increase the intensity of your voice—the audio system provides adequate amplification (approximately 5 – 10 dB) above ambient room noises.
- Avoid wearing jewelry that may rub or bump against the microphone.
- Turn the REDMIKE VC off during private conversations with a student, parent, or other classroom visitor. You can also cover the LED lens on top of the REDMIKE VC to block the signal.
- Recharge batteries each night. When recharged nightly, operating time (actual usage) for the transmitters will last through a typical school day.

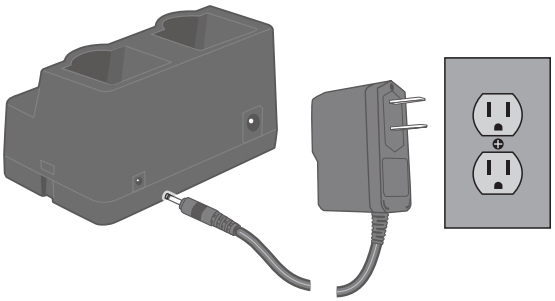
11. CHARGING THE REDMIKE VC

Before use, the REDMIKE VC should be charged. It will take 8-9 hours for the REDMIKE VC to obtain a full charge. A fully charged REDMIKE VC will last for over 7 hours of use. If microphones are used daily, they should be kept in the cradle – microphones can be left in a charging cradle constantly for up to 2 weeks without causing degradation to battery life.

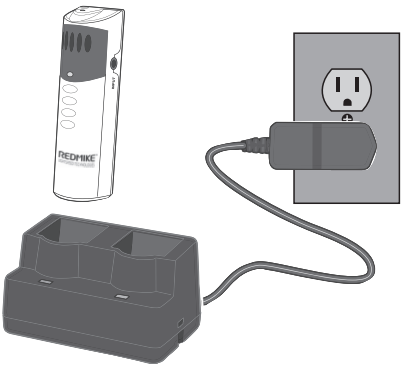
A red light on the charging cradle indicates the REDMIKE VC is charging. A green light indicates that charging is complete and a full charge has been reached. A blinking light indicates a charging or sensing error. See Troubleshooting section for more information.

REDMIKE VC incorporates alkaline protection into the microphone design. Always use a Lightspeed rechargeable sensing battery. Replacement AA NiMH batteries may only be purchased through Lightspeed Technologies (part # BA-NH2A27). Do not attempt to charge alkaline batteries. They can overheat and expand creating a significant hazard and damaging the microphone (this is not covered by warranty).

1. Plug power cord into the cradle charger and then plug the AC end into an electrical outlet.
2. Ensure that the REDMIKE VC is turned OFF.



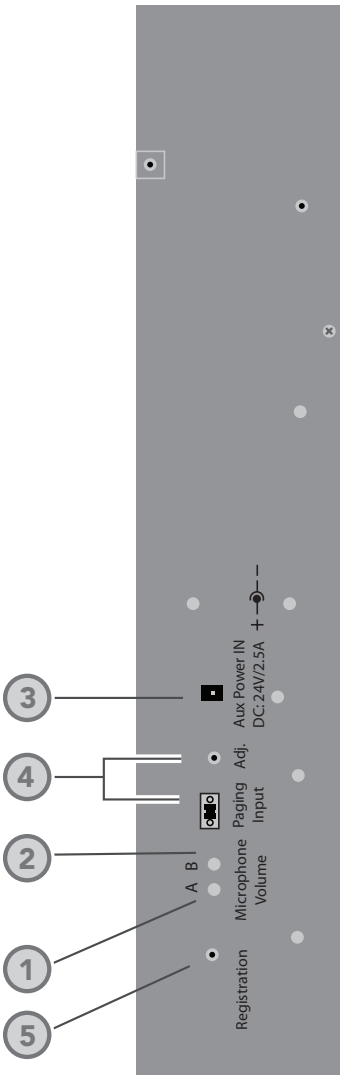
3. Place the REDMIKE VC into the cradle. The LED on the cradle will glow RED indicating charging has started. When the REDMIKE VC is fully charged the LED on the cradle charger will change to GREEN.



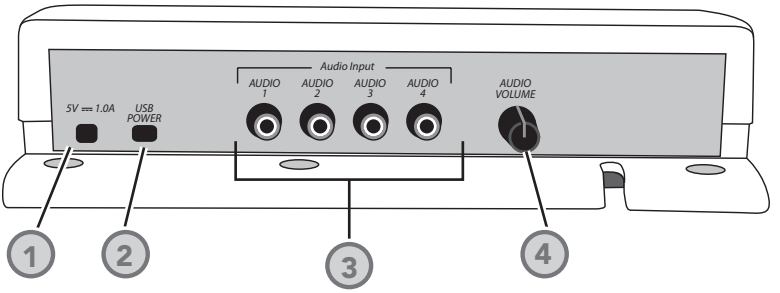
SIDE PANEL CONTROLS AND CONNECTIONS

1. **CH A VOLUME:** Controls the volume level for microphone set to channel A. It is preset at the factory to its 12 O'clock position. Turn clockwise to increase volume or counter clockwise to decrease volume.
2. **CH B VOLUME:** Controls the volume level for microphone set to channel B. Turn clockwise to increase volume or counter clockwise to decrease volume.
3. **AUX POWER INPUT CONNECTOR (OPTIONAL):** For use during installations where AC power is not available in the ceiling. Accepts 24VDC, 2.5A connector from an external power supply.
4. **PAGEFIRST INPUT AND ADJUST:** Connect the input from optional PageFirst sensor when interfacing with the buildings paging system. Use the ADJ control to adjust the sensitivity if needed.
5. **REGISTRATION BUTTON:** This button is used to synchronize the TOPCAT with the Media Connector Module.

SIDE VIEW

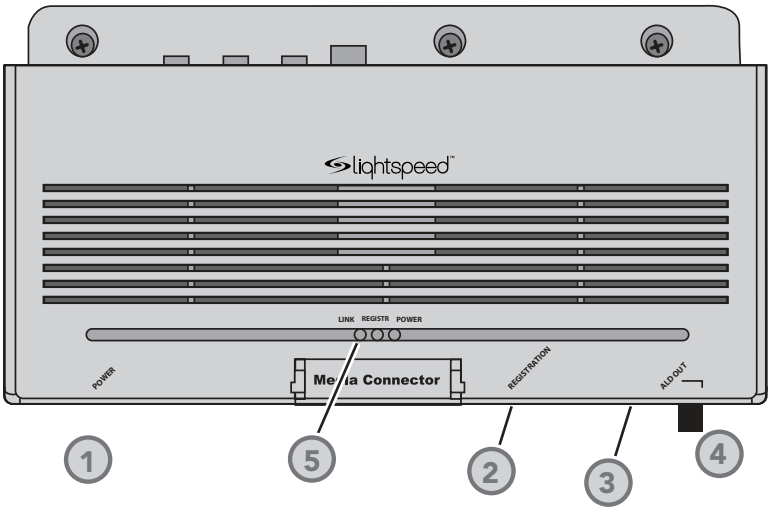


MEDIA CONNECTOR FRONT PANEL CONTROLS



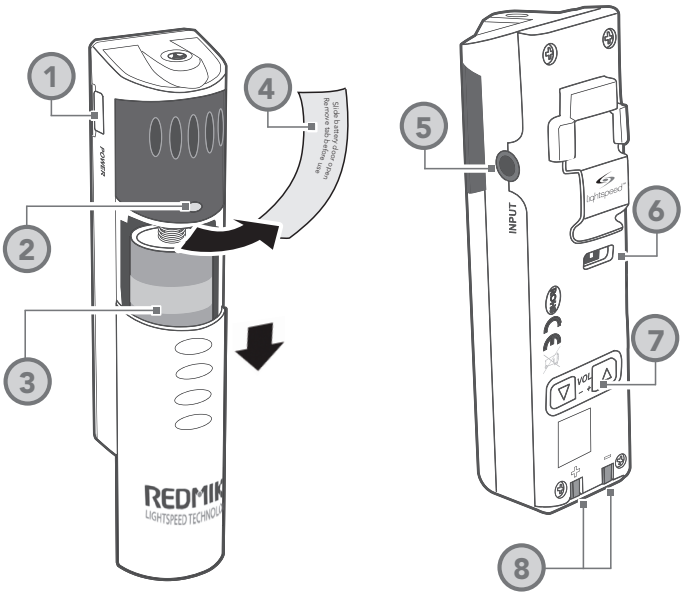
1. **POWER CABLE INPUT:** When using an AC outlet, plug the power supply (5V/1.0A) in to this jack.
2. **USB POWER INPUT:** Alternatively, use the provided USB cable to power the Media Connector from a USB-enabled computer.
3. **FOUR AUDIO INPUTS:** Connect standard audio devices to any of the 3.5mm stereo inputs. A provided cable allows connectivity to RCA stereo outputs common on DVD players and televisions
4. **VOLUME CONTROL:** Controls the output volume of the media connector. Factory pre-set for most applications.

MEDIA CONNECTOR REAR PANEL CONTROLS



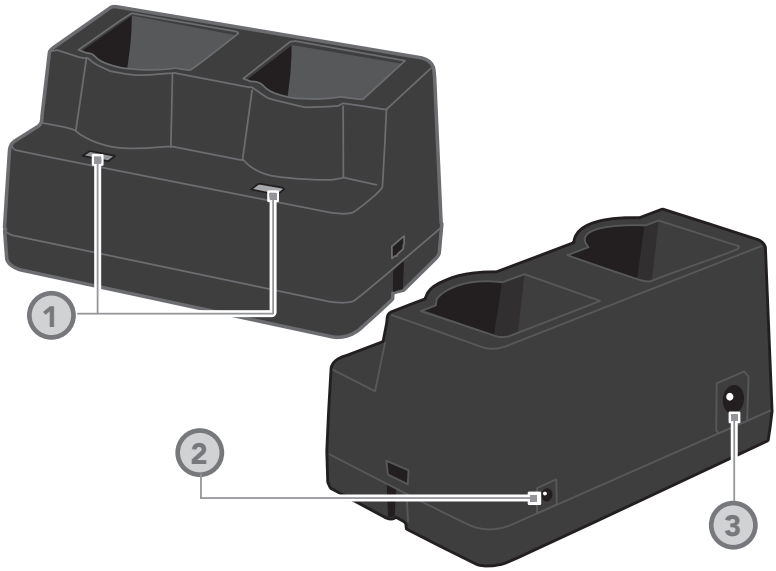
1. **SYSTEM POWER SWITCH:** System power is turned ON or OFF with this pushbutton. When power is ON, the blue power LED lights.
2. **REGISTRATION PUSHBUTTON:** Pushing the Registration button in conjunction with the registration button on the TOPCAT module will cause the two modules to synchronize as an operating system. Refer to the Registration Procedure in this manual.
3. **ALD AUDIO OUTPUT:** 3.5mm stereo jack sends audio signal to external equipment such as a recorder or an assistive listening device like Lightspeed's LES-370 personal FM system.
4. **ALD AUDIO VOLUME CONTROL:** Adjusts the audio signal level output through the ALD audio output connector.
5. **RF LINK LED:** This LED is lit anytime the RF link is established between Media Connector and the TOPCAT. This LED will glow green while the system modules remain linked.

REDMIKE VC (Volume Control) CONTROLS AND CONNECTIONS



1. **POWER /MUTE BUTTON**
2. **POWER/LOW BATTERY INDICATOR:** A BLUE light indicates the REDMIKE VC is on and fully charged. A RED light indicates a charge is needed.
3. **BATTERY COMPARTMENT:** To open, slide the door downward. The battery should only be replaced by a Lightspeed AA rechargeable sensing battery (part # BA-NH2A27).
4. **YELLOW PROTECTIVE TAB:** Slide the battery compartment door and remove this disposable protective tab before use.
5. **AUDIO/MICROPHONE INPUT:** Use this input to plug in a laptop, MP3 player or other audio source to wirelessly transmit audio to be played through the system. Alternatively, an external microphone can be connected.
6. **CHANNEL SELECT SWITCH (CH A/B):** Use this to choose Channel A or B. If you are using a single microphone, we recommend using Channel A.
7. **VOLUME CONTROLS (UP - DOWN)**
8. **CHARGER CONTACTS (+ -):** These contacts interface with the charging tabs when the REDMIKE VC is placed in the BC-RMCC cradle charger.

CRADLE CHARGER CONTROLS AND CONNECTIONS

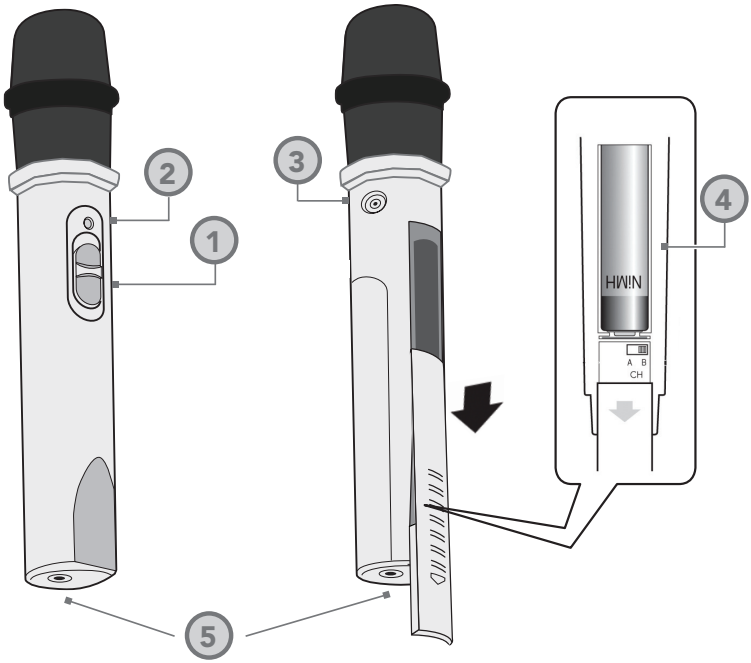


1. **CHARGE INDICATORS:** The light glows RED while the REDMIKE is charging. When fully charged, the light will glow GREEN. A blinking RED light indicates that no battery is sensed, (REDMIKE Yellow Protective Tab may not have been completely removed—see page 5, item 4.) A blinking Green LED means a non- Lightspeed battery has been installed (possibly an alkaline battery).
2. **DC POWER PORT:** Connect the DC power cord here.
3. **OPTIONAL CHARGING PORT:** Plug the charging cord for the optional the REDMIKE Share microphones here.

SECTION 3:

OPTIONAL ACCESSORIES

REDMIKE SHARE: CONTROLS AND CONNECTIONS



1. POWER SWITCH:

2. POWER/CHARGE INDICATOR: this light glows blue when turned on and turns off to indicate low battery level. When charging, the light glows red.

3. AUDIO INPUT: plug a laptop, MP3 player or other audio device into this jack to wirelessly transmit the audio signal to be played through the system.

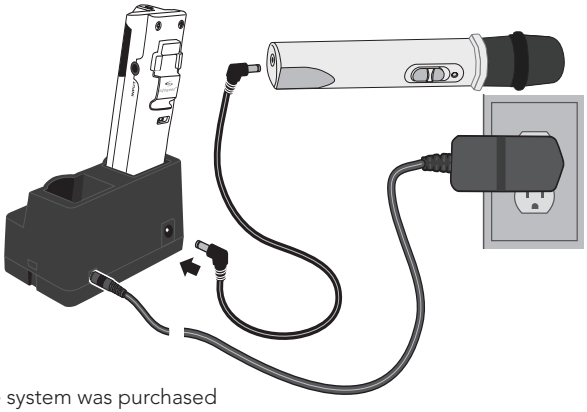
4. CHANNEL SELECT SWITCH (CH A/B): Located in the battery compartment, this switch is set to Channel B at the factory.

5. CHARGER INPUT: Plug the charging cable from the REDMIKE cradle charger or into this jack.

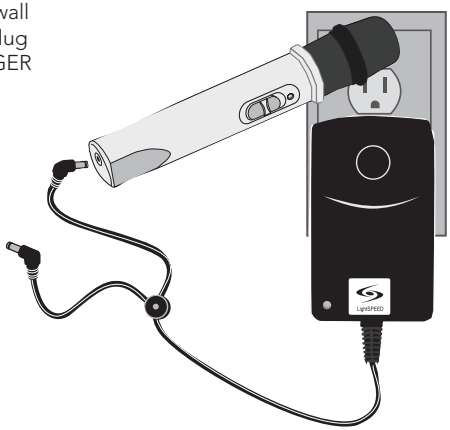
REDMIKE SHARE: CHARGING

Before use, the REDMIKE Share should be charged. It will take 8-9 hours for the REDMIKE Share to obtain a full charge. A fully charged REDMIKE Share will last for over 7 hours of use. If the microphone is used daily, it should be kept plugged into the charging cradle - REDMIKE Share can be left in a charging cradle for up two weeks without causing degradation to battery life.

1. Ensure that the REDMIKE Share is turned OFF.
2. Make sure the cradle charger is plugged into a wall outlet. Connect one end of the charging cable into the jack labeled CHARGER on the bottom of the REDMIKE Share.
3. Plug the other end into the charging jack on the rear of the cradle charger.
4. The LED on the microphone will glow RED to indicate charging.
5. Leave the REDMIKE Share plugged in overnight (8-10 hours) to obtain a full charge.



NOTE: If the system was purchased without a REDMIKE or REDMIKE VC, the REDMIKE Share will utilize the BC-TXLT wall charger. Plug the wall charger into an AC outlet and plug the other end(s) into the CHARGER jack on the REDMIKE Share.



REDMIKE SHARE: INITIAL SET-UP

1. Ensure the TOPCAT is ON. The blue LED on the Media Connector will glow.
2. Turn on the REDMIKE Share by sliding the switch to the top position.
3. Grip the barrel in the center section. Avoid covering the infrared emitters just below the microphone grille. This could interrupt signal transmission.
4. While speaking in a normal voice, increase the CH. B VOLUME on the TOPCAT level until your voice is barely audible.

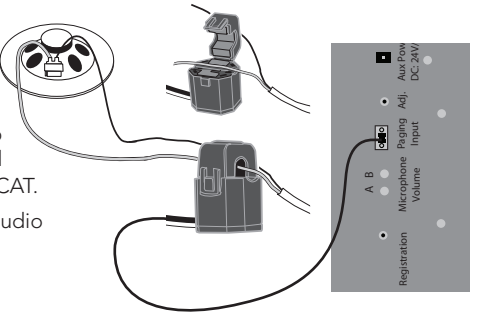
REMEMBER: This equipment is designed to supplement and distribute the user's voice so they are able to speak in a conversational tone. Having the volume set too high will result in feedback and listener fatigue.

OPTIONAL PAGEFIRST INTERFACE

This optional feature interfaces with an independent classroom paging system. When the page is broadcast, all audio from the system is muted, ensuring important and even emergency school-wide messages are never missed.

How it works:

1. PageFirst sensor clip is hung around the lead wires attached to the classroom paging speaker.
2. The clip is hard-wired to the TOPCAT.
3. As a page is broadcast, the sensor clip detects the audio signal through induction and immediately mutes the TOPCAT.
4. When the page is over, the audio from the TOPCAT returns to normal volume level.



(For full installation details refer to the install sheet included with the optional PageFirst sensor clip)

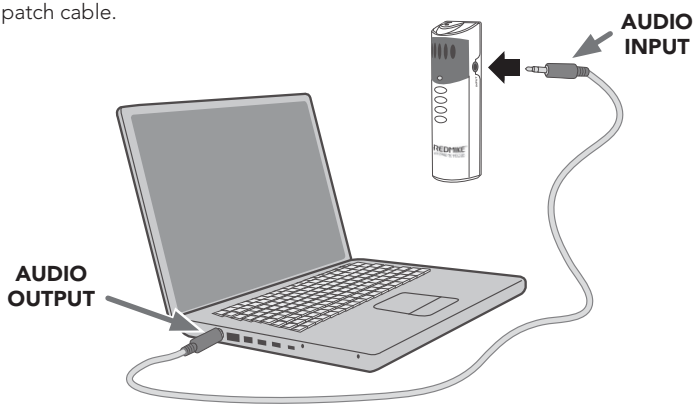
USING THE REDMIKE VC TO AMPLIFY EXTERNAL AUDIO EQUIPMENT

The REDMIKE includes a 3.5mm audio input jack to connect to an audio source like a laptop or MP3 player. The REDMIKE VC will transmit the audio signal to be played through the system.

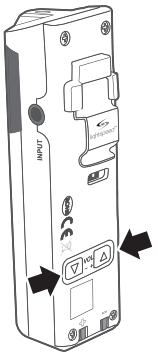
If your system includes two REDMIKE VCs, we recommend using Channel B (student mike) to amplify the external audio equipment so the teacher's volume on the Channel A (teacher mike) does not have to be adjusted.

To determine which REDMIKE VC is set to Channel B, you can look at the switch on the back of the mike.

1. Plug your external audio equipment (for example, laptop), into the input on the REDMIKE VC labeled "INPUT" using a 3.5mm patch cable.

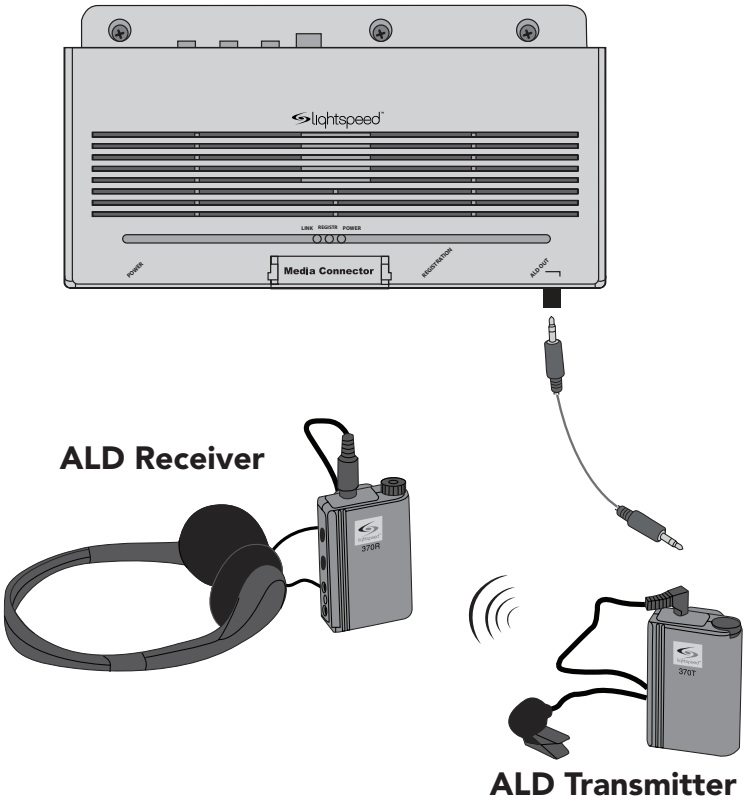


2. Adjust the volume of the REDMIKE VC to achieve desired loudness.



OUTPUT TO ASSISTIVE LISTENING DEVICE (ALD)

1. Turn the ALD (Assistive Listening Device) volume control on the Media Connector front panel all way the down.
2. Determine the size and type of audio input jack on the device as many manufacturers' products differ in connector size and shape. The Lightspeed LES-370 Personal FM System requires a 3.5mm to 3.5mm patch cable (part# CA-MMC3535, not included).
3. Connect a patch cable from the ALD's microphone jack or AUX input to the 3.5mm audio jack labeled "ALD OUT" on the front of the Media Connector.
4. Adjust the volume control on the ALD's receiver to maximum output. NOTE: This is to set the maximum allowable signal from the Media Connector.
5. With the TOPCAT and ALD turned on, speak into the REDMIKE VC and slowly adjust the ALD volume control until the appropriate audio level is attained in the ALD's receiver headphones.

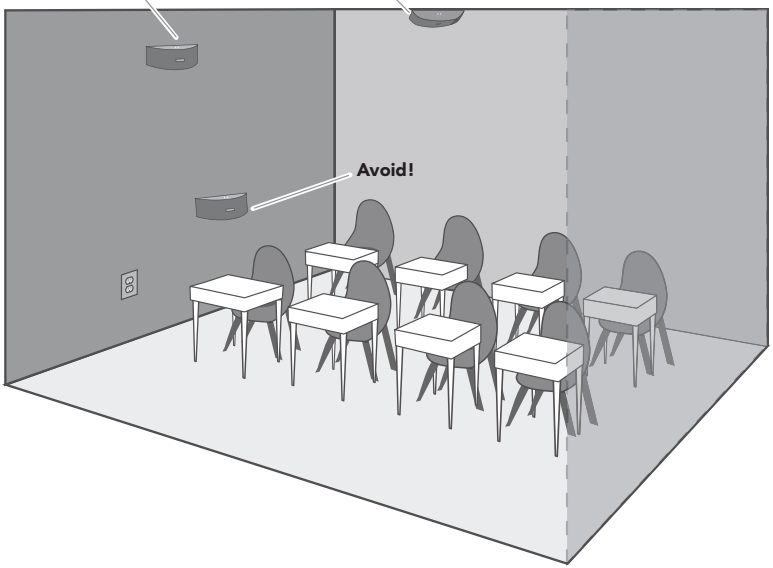


OPTIONAL: IR SENSOR/RECEIVER (ISR) INSTALLATION

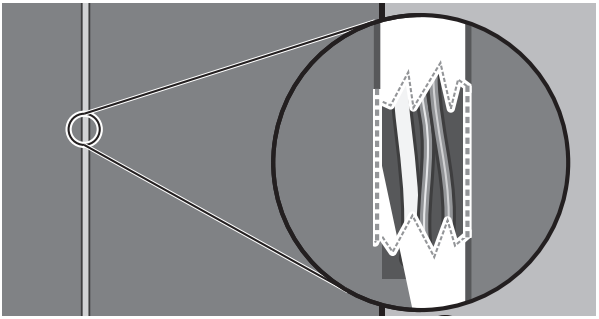
Sometimes having the Integrated Sensor Receiver (ISR) mounted on the TOPCAT in the center of the room is not the ideal location. A poor location will cause substandard performance of the Classroom Audio System. The ISR should be as high as possible in the room – the ceiling is the best location, centered along the longest wall in the room. When possible, use a conduit to protect the wires (not included). Poor choices for placement are corners, on walls at heights lower than 7 feet (2 meters), or in places where the line of sight from the ISR to the receiver is or could be obstructed.

Good placement

Best placement



Conduit is Recommended



IR SENSOR/RECEIVER (ISR) INSTALLATION

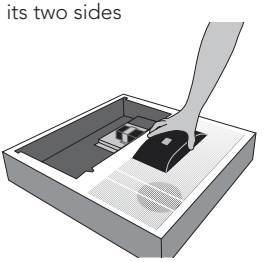
CONT'D

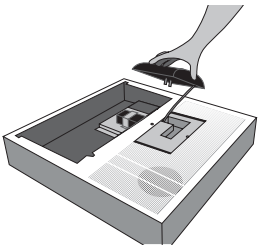
ISR Removal from TOPCAT

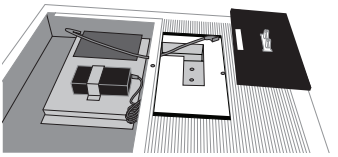
The system ISR is shipped mounted to the TOPCAT front panel. For most installations, it will not need to be moved. However, there are some room situations where the center of the classroom is not the best location and needs to be removed from the TOPCAT and installed else where in the classroom.

1. Remove the ISR

Grasp the ISR on its two sides and pull. Sometimes the ISR cover will come off before its body comes loose. In this case pull the ISR's body until it comes loose.

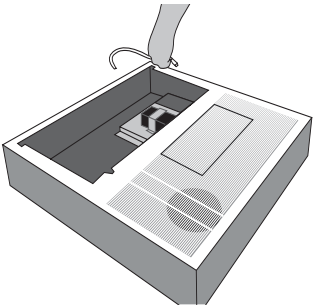






2. Remove Cable

Disconnect the CAT-5e cable connected to the ISR.

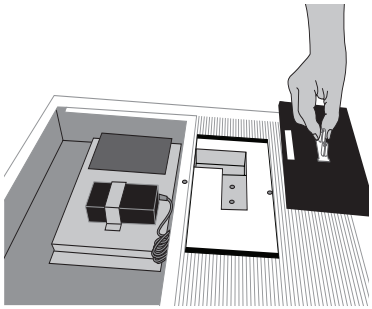


IR SENSOR/RECEIVER (ISR) INSTALLATION

CONT'D

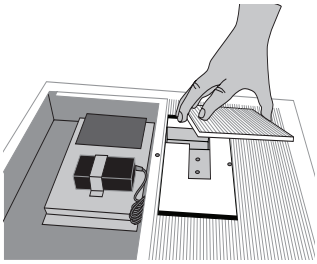
3. Remove Pin From ISR

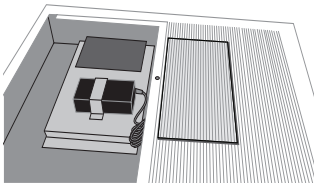
Turn the ISR over and remove the ISR Clip from the ISR (release the spring latch and slide it out).



4. Place Cover Plate Over ISR Opening

Install the blank cover plate (provided with the TOPCAT) by snapping into place where the ISR was located.



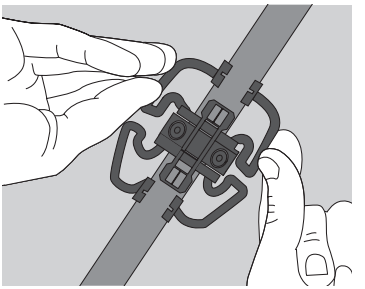


IR SENSOR/RECEIVER (ISR) INSTALLATION

CONT'D

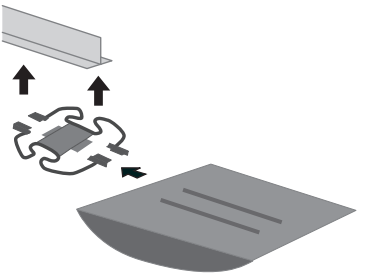
Suspended Ceiling Mount

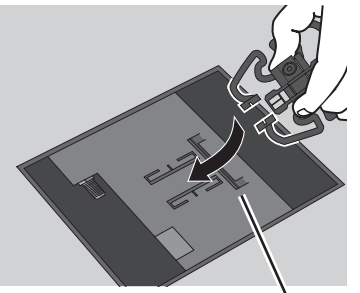
1. Attach the bracket to the ceiling tile grid (t-bar).
   a. Slide the tabs onto the outsides of the t-bar, starting with one corner.
   b. Attach the second tab around the other side of the t-bar.
   c. Repeat with the other side of the bracket so it is connected at all four points.



clip connects to t-bar on ceiling

2. Slide the ISR onto the bracket until it "clicks" into place.
   a. Guide the mounting rails onto the bracket, oriented as pictured.
   b. Once secure the ISR locks into place.
   c. To remove the ISR, press the release bar down and slide the ISR off the bracket.





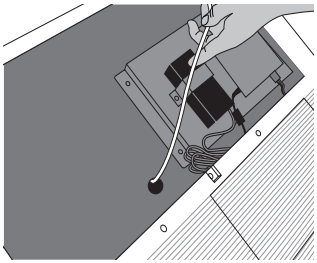
Release Bar

IR SENSOR/RECEIVER (ISR) INSTALLATION

CONT'D

Once you find a suitable location for the ISR, follow these instructions to mount it. There are different instructions for mounting depending on if the ISR will be mounted to a suspended ceiling grid or secured to a wall / solid vertical surface.

3. Uncoil the Cat 5 sensor cable. Connect one end of the cable to the ISR. Secure wire overhead and route it back to the TOPCAT system, making sure to follow all local codes.
4. Insert the CAT 5 cable into the TOPCAT chassis through the 1 inch diameter hole provided.
5. Open the TOPCAT front panel door. Find where the previous CAT 5 cable was connected and plug in the new CAT 5 cable.
6. Secure the CAT 5 cable using cable ties such that the cable is not touching the chassis or able to vibrate against the speaker panel.
7. Close the TOPCAT access door.

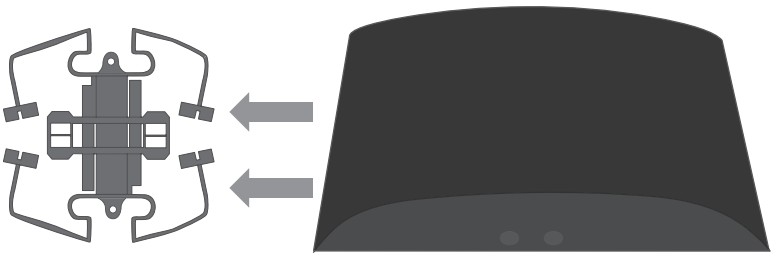


IR SENSOR/RECEIVER (ISR) INSTALLATION

CONT'D

Wall/Solid Ceiling Mount

1. Screw the bracket to a place high on the wall or in the middle of the solid ceiling. Mount the bracket horizontally as shown above.
2. Uncoil the Cat 5 sensor cable. Connect one end of the cable to the ISR. Route the wire back to the TOPCAT system, securing it along with way using surface raceway where possible.
3. Slide the ISR onto the bracket until it "clicks" into place.
   a. Guide the mounting rails onto the bracket, oriented as pictured.
   b. Once secure, the ISR locks into place.
   c. To remove the ISR, slide a ruler or screwdriver behind the ISR to press the release bar down and slide the ISR off the bracket
4. Remove the metal cover (move over to cover the other hole or discard if electrical power is installed) over the 1 inch dia. round hole of the TOPCAT back can to pass the cable into the TOPCAT.
5. Open the TOPCAT front panel door. Find where the previous CAT 5 cable was connected and plug in the new CAT 5 cable.
6. Secure the CAT 5 cable using cable ties such that the cable is not touching the chassis or able to vibrate against the sides of the unit.
7. Close the TOPCAT access door.



REMOVE AND REPLACE AMPLIFIER MODULE

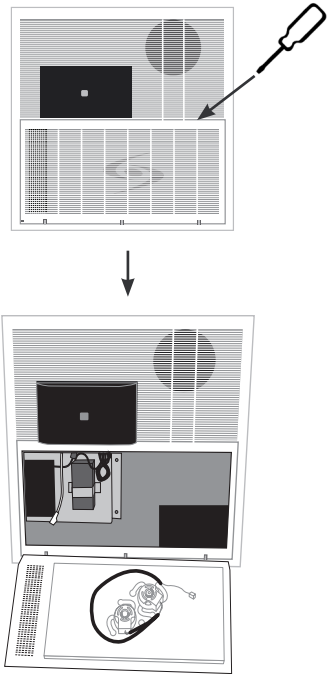
Troubleshooting TOPCAT may require the amplifier module to be replaced. Troubleshooting and repair can be accomplished without requiring the service of an electrician as long as the TOPCAT chassis is not removed from the ceiling. Once replaced, the amplifier will need to be registered with the Media Connector Module and the microphone channel A and channel B will need to be setup with the classroom microphone(s). Use the following procedures to remove and replace the amplifier module:

TOOLS REQUIRED

- Flat blade screw driver
- Phillips screw driver

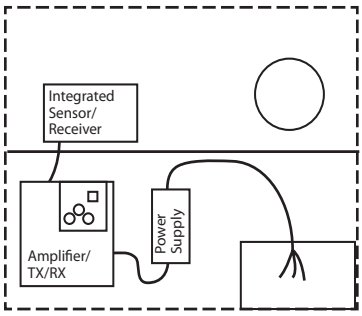
REMOVE AND REPLACE THE AMPLIFIER MODULE

1. Open the TOPCAT access door by inserting flat head screwdriver into the slot tab on the door.



2. Unplug the power cable from the power supply located inside the TOPCAT chassis.

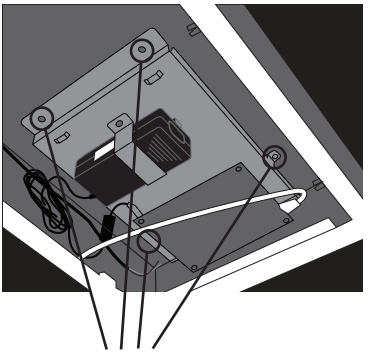
WARNING!
TOPCAT System uses standard 100 – 240VAC power. Obtain the services of a certified electrician when supplying, connecting and disconnecting power to the TOPCAT chassis. Be sure electrical installation complies with local building codes. Improperly installing and /or connecting power may result in Equipment Damage, serious injury and/or Death.



TOPCAT Module

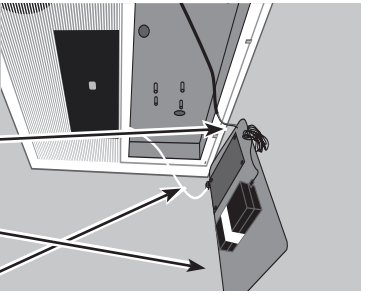
REMOVAL AND REPLACE AMPLIFIER MODULE CONT'D

3. Loosen the screws holding the Amplifier to the chassis. See Figure



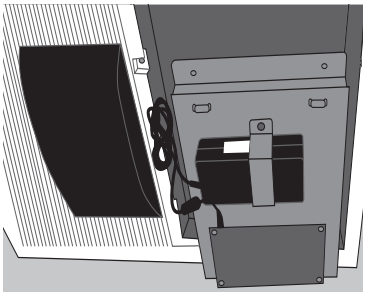
Remove Screws

4. Unplug the following cables from the amplifier module



REMOVAL AND REPLACE AMPLIFIER MODULE CONT'D

5. Remove the Amplifier module



6. To install the new amplifier module, perform this procedure in reverse order.
7. Registering the TOPCAT with the Media Connector Module perform the TOPCAT AND MEDIA CONNECTOR REGISTRATION procedure in this manual.
8. To adjust the optimum microphone volume level, perform the SETUP AND OPERATION OF THE REDMIKE VC procedure in this manual

SECTION 4:

TROUBLESHOOTING

COMMON PROBLEMS AND SOLUTIONS

Note: Most problems are directly related to low battery power. Please run through the "Battery Check" items first. For remaining troubleshooting, use known good, fully-charged batteries.

ALL PROBLEMS: Most Problems are related to low battery power.

SOLUTION: Battery Check

- Confirm the Power LED is blue.
- Confirm batteries are charged each night.
- Confirm proper batteries are used. The REDMIKE VC requires the Lightspeed BA-NH2A27 rechargeable sensing battery for proper charging. The REDMIKE Share uses the BA-NH2APK rechargeable battery pack.
- Make sure the microphones are turned off while charging so a full charge is attained. Full charge will last eight hours.
- Inspect the battery contacts. Clean and adjust if necessary.

PROBLEM: Hearing Static

SOLUTION: Follow these steps to eliminate static.

- Ensure sensor is in optimum location (refer to sensor placement in manual). A single sensor will cover a 1600 sq. ft. enclosed classroom.
- Ensure that no other REDMIKE VC/REDMIKE Share is operating on the same channel. Check the channel switch setting on the back of the REDMIKE VC or in the battery compartment of the REDMIKE Share.

PROBLEM: Low Volume or Feedback

SOLUTION: Follow these steps to eliminate low volume or feedback.

- Ensure microphone is positioned appropriately, just below the collar bone.
- Check volume level on the REDMIKE VC. If the volume is too high, feedback will occur. Adjust accordingly.

PROBLEM: No Sound From Speaker

SOLUTION: Follow these steps to produce sound from speakers.

- Turn the Media Connector on. Confirm that the POWER light located on the top panel switch is on.
- Confirm signal is being received at the ISR on the TOPCAT. The IR signal light will be RED (Green for CH B) indicating a signal is being received.
- Confirm that REDMIKE VC is turned on. There will be a BLUE LED on the microphone to indicate it is powered on.

If you review these instructions and still have questions, write down the serial number and model number of your system and call Lightspeed Technical Services at 800.732.8999, 5 a.m. – 5 p.m., PST.

SECTION 5:

WARRANTY, SAFETY & SPECIFICATIONS

FIVE-YEAR LIMITED WARRANTY

Lightspeed Classroom Audio Systems are guaranteed against malfunction due to defects in materials and workmanship for a period of FIVE (5) YEARS, beginning at the date of the purchase invoice. If such malfunction occurs, the product will be repaired or replaced (at Lightspeed's option) without charge during the warranty period.

Lightspeed's Warranty Exchange Program applies to all infrared systems within the five (5) year warranty period. If an infrared product or component has an issue that requires service, a refurbished replacement will immediately be sent to the customer to minimize downtime. Customers will receive the exchange product(s) or component(s) within 2-3 days. A prepaid return label will be included with exchanged products so original malfunctioned equipment can be returned to Lightspeed. Any exchanged equipment will remain covered under the original five (5) year warranty.

1. Warranty on infrared microphones is FIVE (5) YEARS.
2. Warranty on Lightspeed NiMH rechargeable batteries is one (1) year.
3. Prepaid shipping label provided by Lightspeed for warranty repairs within the U.S. Customers outside the U.S. should refer to the Lightspeed website (www.lightspeed-tek.com) for warranty repair instructions.
4. Warranty does not extend to finish, appearance items, or malfunctions due to abuse or operation other than specified conditions, nor does it extend to incidental or consequential damages. Repair by other than Lightspeed or its authorized service agencies will void this guarantee. Information on authorized service agencies is available from Lightspeed Technologies, Inc.

Our Service Department (800.732.8999, 5 a.m. – 5 p.m., PST) will handle all your repair/replacement needs.

SAFETY WARNINGS AND CERTIFICATIONS

CAUTION

RISK OF ELECTRICAL SHOCK DO NOT OPEN

THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE INSTALLATION CODE BY A PERSON FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE PRODUCT AND THE HAZARDS INVOLVED.

LABEL P/N: 334-0079-00

USE A LIGHTSPEED SUPPLIED BATTERY ONLY

CERTIFICATIONS

c UL us LISTED

This product is listed to UL standards and requirements for electrical safety by Underwriters Laboratories Inc.

CE

This product conforms with the essential requirements of the following European Union Directives: 89/336/EEC, 92/31/EEC, 93/68/EED, and 2004/108/EC Electromagnetic Compatibility Directives.

Lightspeed Technologies launched a formal product recycle program in Europe that complies with the European Union Directive 2002/96/EC on Waste Electrical and Electronic Equipment ("WEEE Directive"). Please visit our website at www.Lightspeed-tek.com for more information.

ROHS

This product is manufactured using lead-free processes and is free of other materials harmful to the environment. It conforms to the most stringent new European guidelines for consumer products (RoHS).

FC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This equipment has been tested and found to comply with the limits of a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Caution: To maintain the compliance with the FCC's RF exposure guideline, place Media Connector & TOPCAT at least 20 cm from nearby persons.

SYSTEM SPECIFICATIONS

OVERALL SPECIFICATIONS

TOPCAT Specifications	
Descriptiont	Two-way hybrid speaker system with NXT distributed mode panel and low frequency cone driver
Panel Size	16.25" x 8.25"
Frequency Response	60 Hz - 18 kHz @ 10dB
Impedance	4 Ohms
Power Handling	20W RMS
Power	24V DC 2.5A
Enclosure	24" x 24" x 3" plenum-rated enclosure (UL 2043) / 595mm x 595mm x 101.6mm
Weight	22 lbs / 9.98 Kg

RECEIVER/TRANSMITTER SPECIFICATIONS

Media Connector Module	
Frequency Response	80 Hz to 10 kHz ±3 dB
Signal-to-noise Ratio	>70 dB
Audio Distortion	<1%
Audio Inputs	Four (4) 3.5mm stereo jack
Audio Outputs	One 3.5mm stereo jack with volume control
DC Power Input	5 V / 1.0 Amp, 0.65mm coaxial barrel DC power jack
USB Power	5 V mini-B USB connector
Mounting	wall or table-top
Dimensions (L x W x H)	5.75" x 8.75" x 10" / 146mm x 222.3 x 254mm

TRANSMITTER SPECIFICATIONS

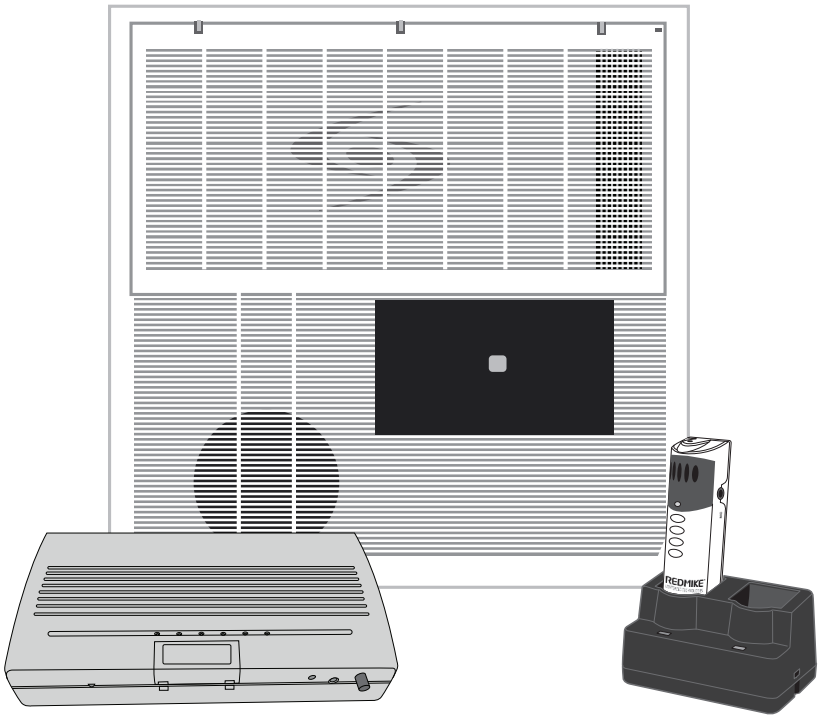
REDMIKE VC	
Audio Distortion	< 1 %
Built-in Microphone	Unidirectional Electret
Battery Power (1-year warranty)	1 AA NiMH Rechargeable Sensing Battery
Audio Input	3.5 mm
Dimensions (W x D x H)	0.9" x 1.0" x 3.5" / 22.86mm x 25.4mm x 88.9mm
Weight	2.1 oz. / 59.53 g

REDMIKE Share Handheld Microphone	
Audio Distortion	< 1 %
Built-in Microphone	Unidirectional Electret
Battery Power (1-year warranty)	2 AA NiMH Battery Pack Rechargeable
Dimensions (W x D x H)	2.25" x 2.25" x 8.75"/ 57.5mm x 57.15mm x 222.25mm
Weight	7.36 oz. / 208.65 g

SYSTEM SPECIFICATIONS CONT'D

INFRARED SENSOR

INTEGRATED SENSOR / RECEIVER (ISR)	
Power	From TOPCAT
Reception Coverage	Rooms up to 1600 sq ft / 150 m^2 (ceiling 12ft / 3.66 or less)
Mounting	Integrated on TOPCAT ceiling clip / wall bracket
Receiving Diodes	32



Installer's Manual

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use the apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding- type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. When the mains plug or appliance coupler used as the disconnect device, it shall remain readily operable.
16. Please keep the unit in a good ventilation environment.

IMPORTANT SAFETY INSTRUCTIONS CONT'D

To avoid potential equipment damage and/or serious injury, READ AND FOLLOW all safety precautions when installing the TOPCAT. WARNINGS are coated throughout the procedural steps in this guide, and are repeated below for emphasis.

CAUTION

- **USE A CERTIFIED ELECTRICIAN FOR POWER CONNECTIONS.** The TOPCAT system uses standard 100 – 240VAC power. Obtain the services of a certified electrician when supplying and connecting power to the Ceiling Enclosure. BE SURE electrical installation complies with local building codes. Improperly installing and/or connecting power to the system may result in EQUIPMENT DAMAGE, serious INJURY and/or DEATH.
- **DO NOT INSTALL ALONE.** The Ceiling Enclosure weighs approximately 20 lbs, and requires at least two people to install. DO NOT install alone.
- **USE SUITABLE LADDERS.** use proper ladders or support platforms when installing the TOPCAT Enclosure. DO NOT stand on chairs, tables, or other unsuitable surfaces.
- **SUPPORT THE CEILING ENCLOSURE PROPERLY.** DO NOT allow the full weight of the Ceiling Enclosure to rest on the tile grid of the ceiling. The Ceiling Enclosure is designed to be suspended at TWO POINTS by suspension wires (secured to rafters or other suitable mounting points) and to rest LIGHTLY on the tile grid.

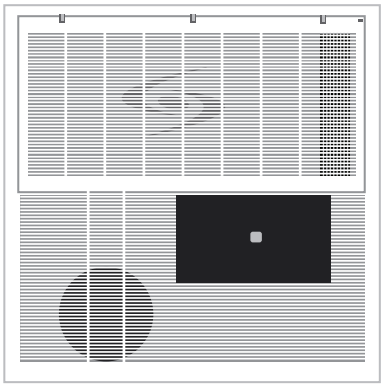
SECTION 1:

OVERVIEW

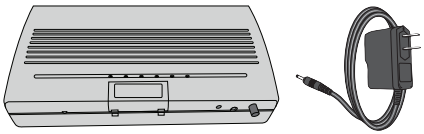
SYSTEM COMPONENTS AND UNPACKING

The standard configuration of the TOPCAT® will contain:

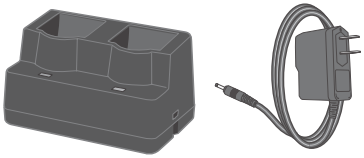
TOPCAT Module



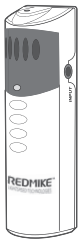
Media Connector Module



Charging Cradle and Power Supply



REDMIKE® VC Volume Control Microphone

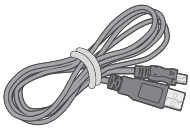


SYSTEM COMPONENTS AND UNPACKING

CONT'D

Audio Cable Kit

USB Cable

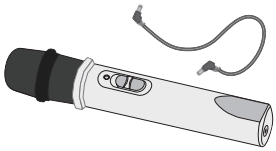


Screws and Anchors for optional wall mounting

OPTIONAL COMPONENTS

Optional equipment which may be part of your TOPCAT system:

REDMIKE® Share Handheld Mic & Charger Cable



DC Cable

SYSTEM COMPONENTS

Equipment which may be part of your TOPCAT:

Standard Accessories	
TRX-TC	TOPCAT all-in-one ceiling mount system
PS-24V-2.5	24V/2.5A power supply for TOPCAT
RMV	REDMIKE VC microphone with battery
BA-NH2A27	AA NiMH rechargeable sensing battery for REDMIKE
AC-RMLC2	REDMIKE lavaliere cord
BC-RMCC	REDMIKE cradle charger
PS-5V-1.0	5V/1.0A power supply
TRX-MC	Transmitter-Receiver Media Connector Module
CA-USBAM	USB cable (type A-MINI-B)
CA-MSC3535	Patch cables 3.5mm to 3.5mm short length
CA-AD-RCA2-35	Dual RCA jack – 3.5mm stereo plug adapter

Optional Components	
RMS	REDMIKE Share handheld microphone w/battery pack
MC-TK250LTM	Noise-canceling headset microphone
AC-TCC7	Charging cable for LT-71 and REDMIKE Share microphones
CA-RCA6	6’ dual RCA audio cable
CA-RCA24	24’ dual RCA audio cable
CA-MMC2535	Audio patch cable (2.5 mm mono to 3.5 mm mono)
BA-NH2APK	AA Rechargeable battery (REDMIKE Share)
DCPEX-NA	50’ plenum rated DC Power cable kit

SECTION 2:

INSTALLATION

INSTALLATION PLANNING

Before beginning installation, make sure you have the necessary tools and materials on hand and that pre-installation site preparation has been accomplished.

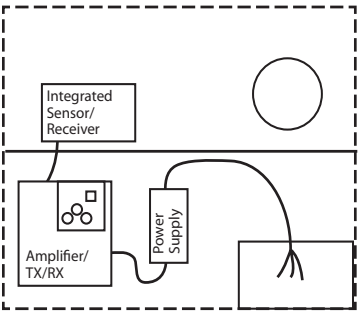
TOOLS & MATERIALS

In addition to the contents of the TOPCAT system, you will need the following tools & materials:

- Flat Blade screwdriver (small)
- Pliers
- Wire cutters
- Drill
- Utility Knife

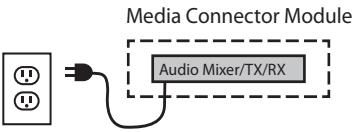
SITE PREPARATIONS

A schematic/wiring diagram of a typical TOPCAT installation is shown in the following figure:



TOPCAT Module

NOTE: TOPCAT is designed for installation in a 2' x 2' or 2' x 4' suspended ceiling grid (or 600mm x 600mm international ceiling grids). If you do not have this type of ceiling, please contact your local Lightspeed Classroom Audio Consultant.



1. SELECT MOUNTING LOCATION

The TOPCAT is shipped ready to mount in a standard suspended ceiling grid. All mounting hardware need to secure the TOPCAT in the ceiling is provided except for that needed to wire the AC power to the chassis.

TOPCAT will distribute sound throughout a classroom of up to 1600 square feet. The location of TOPCAT is critical to ensure even sound distribution.

1. Identify the center of the listening area of the classroom for optimum location. See Figure 1.
2. Select a ceiling tile that is free of fixtures (lighting, HVAC, etc.) nearest to the center point.
3. Remove the selected ceiling tile for TOPCAT installation.

NOTE: Do not install where the integrated sensor/receiver (ISR) is in the reflected light of a hanging light fixture. The ISR can be removed from the TOPCAT and placed elsewhere on the ceiling or classroom wall.

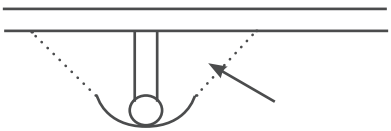
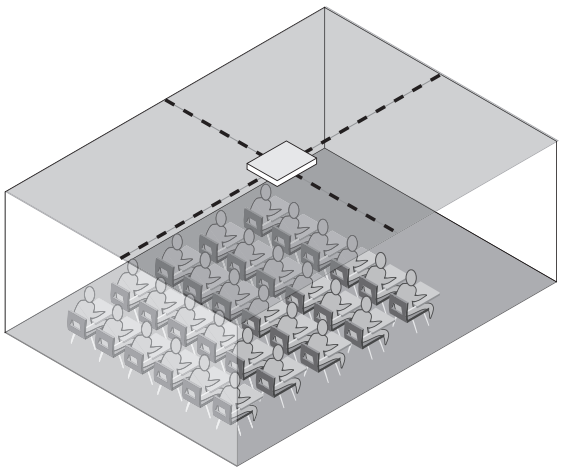


Fig 1: Identify the Center of the Listening Area



2. INSTALLING THE TOPCAT INTO THE CEILING GRID

The dimensions of the TOPCAT speaker are 595mm x 595mm and is designed to lie onto any standard suspended ceiling tile grid. Spacers are attached to center the TOPCAT in a 2′ x 2′ or 2′ x 4′ ceiling grid. (Remove these spacers when installing into a 600 x 600 mm grid.)

1. If the ceiling tile that was removed is 2′ x 4′, it needs to be cut in half to accommodate the TOPCAT. If the ceiling tile that was removed is 2′ x 2′, no cutting of the tile is necessary.
2. Set the ceiling tile on a flat work surface with the patterned side facing down.
3. Using a straight edge, cut the 2′ x 4′ ceiling in half (see figure 2) leaving two 2′ x 2′ sections.
4. Locate the 2′ ceiling grid t-bar attachment. Locate the attachment slots in the existing ceiling grid and snap the new t-bar into place to crate two 2′ x 2′ openings (see figure 3).
5. Lift the TOPCAT up and lay it into the desired 2′ x 2′ opening in the ceiling.

Figure 2: Cut the 2′ x 4′ Tile in Half

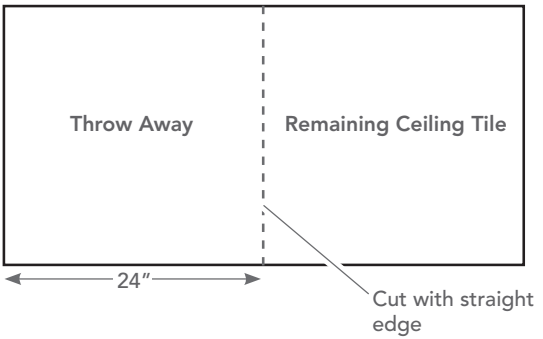
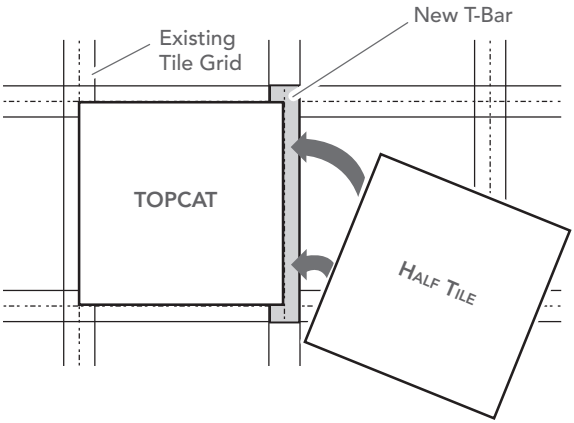


Figure 3: Create Two 2′ x 2′ Openings



3. SECURING THE TOPCAT

To comply with Building Codes, the TOPCAT MUST be fastened to the ceiling grid and secured with a safety wire. Follow all local and state laws.

1. Locate the four (4) self-drilling sheet metal screws.
2. Utilizing existing center holes on the vertical section of the ceiling grid, drill one screw per side on opposite sides of the TOPCAT (see figure 4).
3. Locate the 15ft length of safety wire and the eye screw. The safety wire needs to be permanently attached to the solid structural ceiling above.
4. Install the eye screw (or concrete anchors if necessary) into the structural ceiling.
5. Loop one end of the safety wire through the eye screw (or anchor), then twist it around itself at least five times.
6. Pull one of the tabs up on the TOPCAT rear panel (located in opposite corners) and loop the other end of the safety wire through the tab. Pull the wire through until it is taught and twist it around itself at least five times to secure the speaker. Cut off any excess wire if needed. (see figure 5)

Figure 4: Secure with Self-Drill Screws into the TOPCAT

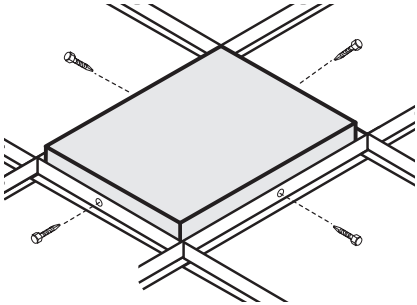
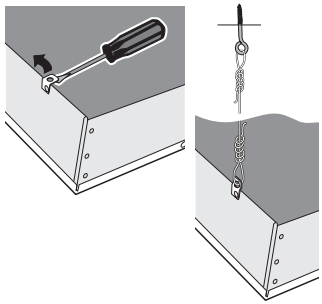


Figure 5: Looping the Safety Wire Through the Tab



4. INSTALLING AND WIRING ELECTRICAL POWER

There are two methods of providing power for the TOPCAT.

1. New Construction Installations: Connect directly to the buildings mains AC power.
2. Retrofit situations: Can either wire to the building mains or order the optional power extension cable (DCPEX-NA).

SUPPLY POWER TO THE SELECTED LOCATION

WARNING!

USE A CERTIFIED ELECTRICIAN FOR POWER CONNECTIONS.

The TOPCAT System uses standard 100 – 240VAC power. Obtain the services of a certified electrician when supplying and connecting power to the TOPCAT chassis. Be sure electrical installation complies with local building codes. Improperly installing and /or connecting power to the system may result in Equipment Damage, serious injury and/or Death.

When routing power to the TOPCAT, avoid interference with lighting and other noise possibilities.

CAUTION:

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Wire AC power to the TOPCAT as follows:

a. Turn off the current at the main breaker. Attach the electrical wiring to the TOPCAT Ceiling Module as shown

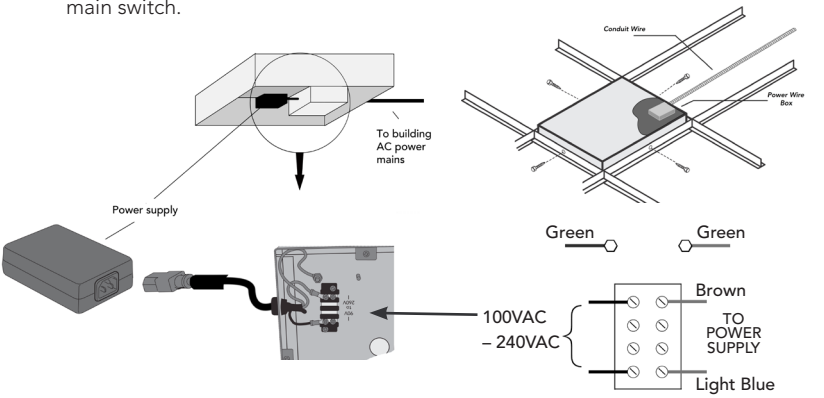
b. Find the electrical box hole on the TOPCAT back can. Insert the mains electrical wire through the hole.

c. Find and open the front panel door on the TOPCAT.

d. Remove the lid to the internal electrical box

e. Attach the ground wire to the grounding lug provided. Attach the remaining two wires to the terminal block screws adjacent to the internal power wires.

f. Replace the lid on the electrical box and turn the electrical current on at the main switch.



ALTERNATE POWER (OPTIONAL)

When electrical AC power is not available above the ceiling for installation with the TOPCAT, there is an alternative method for supplying power to the TOPCAT.

Note: There are two DC Power Connectors for connecting power to the TOPCAT. Both connectors perform the same function. Use the internal DC Power Connector located on the amplifier card when AC power is connected directly to the TOPCAT. Use the connector access located on the outside of the TOPCAT when using the optional power extender cable.

1. Remove the 24V 2.5A power supply module with its DC power cord that is secured inside the access door of the TOPCAT.

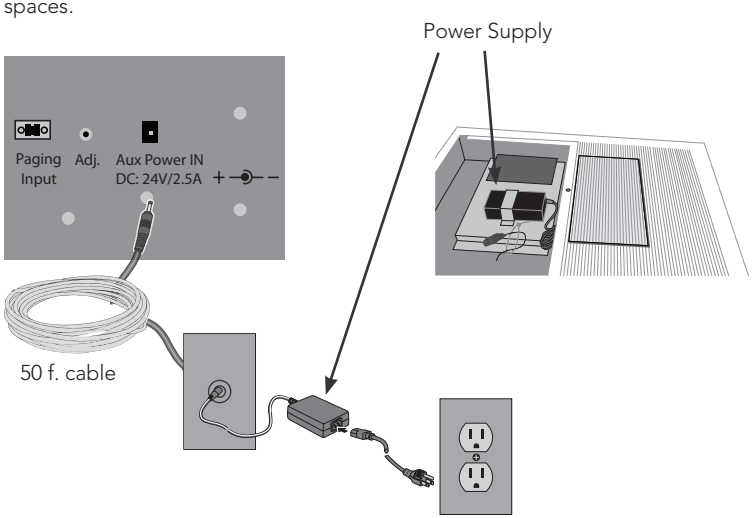
2. Find the 50' DC power extender cable (P/N: CA-DCPEX) and plug the female connector into the side port on the TOPCAT. Use the wire anchor supplied with the cable to secure the cable to the side of the TOPCAT chassis. Use the cable tie provided to secure the end of the power cable remaining in the TOPCAT. This cable should not touch the flat panel speaker when the door is closed.

3. Route the power extender cable across the ceiling and to the closest standard AC power outlet. Cable routing should follow all local electrical codes and installation procedures. (If the power extender cable is to be run inside the wall, install a mud ring or electrical box in the wall close to the AC power outlet. If the power extender cable is run on the surface of the wall using wire molding, then mount a surface mount electrical box to house the connection of the extender cable and the power supply.)

4. Plug the DC power cable end of the 24V supply into the power extender cable.

5. Plug the AC power cord into the power supply and into the standard AC power outlet.

Note: the 50' power extender cable is plenum rated, suitable for air handling spaces.



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